

WHAT IS CLAIMED IS:

1 1. An integrated circuit comprising a differential impedance termination
2 circuit, the differential impedance termination circuit comprising:
3 first resistors coupled in series; and
4 a first transistor coupled in series with the first resistors; and
5 a first memory coupled to a gate of the first transistor that is programmed to
6 effect an impedance of the impedance termination circuit,
7 the impedance termination circuit being coupled between first and second
8 differential pins of the integrated circuit.

1 2. The integrated circuit according to claim 1 wherein the integrated
2 circuit is a field programmable gate array.

1 3. The integrated circuit according to claim 1 wherein the integrated
2 circuit is an application specific integrated circuit.

1 4. The integrated circuit according to claim 1 further comprising:
2 a second transistor;
3 a second memory coupled to a gate of the second transistor that is
4 programmed to effect the impedance of the impedance termination circuit; and
5 a second resistor coupled in series with the second transistor, the second
6 resistors and the second transistor being coupled in parallel with at least one of the first
7 resistors when the second transistor is ON.

1 5. The integrated circuit according to claim 4 further comprising:
2 a third transistor;
3 a third memory coupled to a gate of the third transistor that is programmed to
4 effect the impedance of the impedance termination circuit; and
5 a third resistor coupled in series with the third transistor, the third resistor and
6 the third transistor being coupled in parallel with at least one of the first resistors when the
7 third transistor is ON.

1 6. The integrated circuit according to claim 4 further comprising:
2 a third transistor coupled in parallel with the second resistor; and
3 a third memory coupled to a gate of the third transistor.

1 7. The integrated circuit according to claim 1 further comprising:
2 a second transistor coupled in parallel with the first transistor; and
3 a second memory coupled to a gate of the second transistor that is
4 programmed to effect an impedance of the impedance termination circuit.

1 8. The integrated circuit according to claim 1 further comprising:
2 a second transistor coupled in parallel with one or more of the first resistors;
3 a third transistor coupled in parallel with the second transistor;
4 a second memory coupled to a gate of the second transistor; and
5 a third memory coupled to a gate of the third transistor.

1 9. The integrated circuit according to claim 1 further comprising:
2 a second transistor coupled in parallel with one or more of the first resistors
3 and the first transistor;
4 a second memory coupled to a gate of the second transistor that is
5 programmed to effect an impedance of the impedance termination circuit;
6 second resistors coupled in series with the second transistor;
7 a third transistor coupled in parallel with one or more of the second resistors;
8 and
9 a third memory coupled to a gate of the third transistor.

1 10. A method for providing selectable termination impedance across
2 differential pins on an integrated circuit, the method comprising:
3 storing a voltage in a first memory;
4 providing the voltage stored in the first memory to a gate of a first transistor;
5 conducting current through first resistors when the first transistor is ON; and
6 blocking current through the first resistors when the first transistor is OFF.

1 11. The method as defined in claim 10 further comprising:
2 storing a voltage in a second memory; and
3 providing the voltage stored in the second memory to a gate a second
4 transistor that is coupled in parallel with the first transistor.

1 12. The method as defined in claim 11 wherein the second transistor is
2 coupled in parallel with at least two of the first resistors and the first transistor.

1 13. The method as defined in claim 10 further comprising:
2 storing a voltage in a second memory;
3 providing the voltage stored in the second memory to a gate of a second
4 transistor that is coupled in parallel with the first transistor;
5 conducting current through second resistors coupled in series with the second
6 transistor when the second transistor is ON; and
7 blocking current through the second resistors when the second transistor is
8 OFF.

1 14. The method as defined in claim 13 further comprising:
2 storing a voltage in a third memory;
3 providing the voltage stored in the third memory to a gate of a third transistor
4 that is coupled in parallel with a first one of the second resistors.

1 15. The method as defined in claim 14 further comprising:
2 storing a voltage in a fourth memory;
3 providing the voltage stored in the fourth memory to a gate of a fourth
4 transistor that is coupled in parallel with a second one of the second resistors.

1 16. The method as defined in claim 10 further comprising:
2 storing a voltage in a second memory; and
3 providing the voltage stored in the second memory to a gate of a second
4 transistor that is coupled in parallel with one or more of the first resistors.

1 17. The method as defined in claim 16 further comprising:
2 storing a voltage in a third memory; and
3 providing the voltage stored in the third memory to a gate of a third transistor
4 that is coupled in parallel with one or more of the first resistors.

1 18. The method as defined in claim 10 wherein the integrated circuit is a
2 programmable logic device.

1 19. The method as defined in claim 10 wherein the integrated circuit is an
2 ASIC.